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AUTHOR Rasor, Richard A.; Powell, Tom
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ABSTRACT

Since fall 1983, each student intending to enroll in an English course at American River College (ARC) has been required to take a placement test consisting of the vocabulary and usage subtests of the Descriptive Tests of Language Skills of the College Board. A study was conducted to establish the predictive capability of the test by correlating course grades with test results. Correlation values were determined only for grades A to D, as experience indicated that F grades were frequently undistinguishable from W (withdrawal) grades and neither grade was given primarily to low-ability students. Due to a lack of normative data for the test, it was not possible to compare ARC results with other norms. The study found no correlation between grades and test scores for three of four English courses. Based on study findings, the following recommendations were made: (1) locate or develop a criterion-based test using a writing sample to place students; (2) if this is not possible, expand the current placement test to include other subscales or consider a different test; (3) if these options are not possible, eliminate the vocabulary test and include the sentence structure subtest; (4) establish reasonably common criteria for grading; (5) continue the policy of using placement test scores only for guidance purposes until validity has been established; and (6) have assessment test results and grades in a centralized computer. (LAL)

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PREDICTING ENGLISH WRITING COURSE SUCCESS WITH THE VOCABULARY AND USAGE SUBTESTS OF THE DESCRIPTIVE TESTS OF LANGUAGE SKILLS OF THE COLLEGE BOARD

by

Richard A. Rasor

and

Tom Powell

American River College

1984

JC 840 209

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Starting with the Fall 1983 semester, each student entering ARC is required to take a placement test if he/she intends to enroll in an English writing course. The test is a combination of two subtests of the Descriptive Tests of Language Skills of the College Board. They are: Vocabulary (30 questions measuring ability to recognize synonyms of words) and Usage (40 questions based upon an ability to recognize errors in sentence structure). The total time for taking both subtests is 45 minutes. Henceforth, these two subtests will be referred to as the English Placement Test. Currently this test is supposed to be used only as a guidance tool. However, students are strongly encouraged to follow the dictates of counselors, personnel at the assessment center, or instructors who give advice regarding course placement based upon score. Yet, any student currently has the right to enroll in any English writing course regardless of test results. Thus, there is something of a quasi-prerequisite.

The responsibility of evaluating the English Placement Test fell jointly upon Tom Powell in the Assessment Center and Dick Rasor in the Research Office. The entire venture was also coordinated with Jerry Stypes (District Data Processing), the ARC Research Coordinating Committee, and the ARC Assessment Advisory Committee. The research plan was relatively simple but implementing it was very difficult. Basically, English grades were to be correlated with English Placement Test results, the purpose being to establish predictive capability. If low scoring students earned low grades and high scorers earned high grades, then the test would seem to be valid. Such validity would be "back-up" for counseling students into the proper English writing courses. If such correlations were to turn out negligible, then one would have to question the wisdom of spending time, energy and money in administering this test.

Correlation values will be reported only for grades A - D. It has been our experience that "F" grades are frequently indistinguishable from "WT's" (class drop - 4th week on). Both are given to non-attending students. Furthermore, if "F" really isn't "failure in ability" but rather failure in attendance, then how is one to give it a numeric value? How should class drops after the 4th week (WT's) be quantified? Whenever we examined "F" or "WT" students in a variety of courses on a variety of placement instruments, the results consistently showed "F" and "WT" student scores to be near the "A" or "B" grade level. Clearly, most "F's" and "WT's" are not low ability students. Therefore, we decided not to include "F's" and "WT's" in reporting correlations, for to do so would spuriously lower the correlation value. Whenever we did include them, the correlation value went down. We also decided to prepare frequency distributions, plotting all scores against all grade outcomes including "F" and "WT". Additionaly, we wanted to show the average assessment score for each grade level in each course.

Why was implementing this difficult? Assessment data are not stored with District Data Processing. An alphabetized list of students with grades was prepared by the District. Then each name (over 1200) had to be checked against a test file in ARC's Assessment Office. Such data then had to be posted beside each grade. Clearly, if such placement test evaluations are to continue, the entire data process must be centralized within one computer system. The long hours spent in clerical tasks could easily be relegated to a larger computer as could much of the statistical summaries.

We assumed that students who were assessed during the summer of 1983 would not qualify for English 1A (or English 57/60) by taking other remedial work. Our logic was that if students completed English 56 for

entry into English 57/60, or completed English 57/60 for entry into English 1A , then why would they also take a placement test? Hence, we presume that final grades in this study are "pure" in that students did not take prerequisite course work but entered directly. Currently, there is no computer method of checking prerequisites.

The Placement Test - Normative Data

The College Board, in their manual, reports only modest evidence for validity of this test. Nowhere are data provided for scores added together (e.g., vocabulary and usage) making it virtually impossible to determine a combined mean and standard deviation. No national norms were collected -- only data based upon a pilot study where students at one school took the vocabulary test while students from other schools took different subtests. Correlations between subtest scores and grades in English writing courses are reported, but they are based upon very small numbers of students. For example, one correlation is based upon 32 students resulting in a value of .03. (Correlations range from .00 to 1.00 with .40 or higher being "respectable".) The median correlations reported for subtest scores and grades are Vocabulary .31 and Usage .37, neither value particularly high. The strongest set of scales are Reading .42, Sentence Structure .38 and Usage .37. The weakest is Vocabulary with correlations ranging from -.02 to .49.

The manual does not report multiple correlation values for two or more subscales combined. One must conclude that the College Board has not provided the necessary technical data to support contentions of validity. As a concluding point, recall that the Vocabulary test consists of 30 items while Usage has 40. By simply adding the two scores one gives 14% more weight to Usage. It is also a misnomer to identify the Vocabulary subtest as ARC's reading test.

ARC Norms

Presented in Table 1 are various statistics based upon the ARC sample of 950 students. Because the College Board does not report data on combined scales, exact comparisons between ARC and other normative data are impossible. The best estimate for a national median is 49. This value compares well with ARC's 49.4 median. The cutoff score of 57 for English 1A corresponds well with placement expectations. The 37 cutoff score for English 57/60 may be a bit low since 25% of ARC's sample fell below a score of 41. It was expected that 25% would fall below a score of 37, not 41. The highest scoring person in the sample (69 out of 70 correct) also produced a Z score of 1.86 standard deviations above the mean. This would suggest that the English Placement Test could use more ceiling, that is, more items and more difficulty. The mean value of 48.5 corresponds to 70% correct. Ideally, the mean should be 50% for maximum discrimination power. Overall, the shape of the score distribution (See Figure 1) approximates the normal curve with a slight negative skew. This indicates that the cluster of scores is on the high end. Once again, this suggests not enough ceiling.

Table 1

Selected Summary Statistics for ARC English Placement Test Norms (N = 950, Fall 1983)

Statistic	Value
Mean	48.50
Median	49.40
Mode	50
Standard deviation	11.03
25th percentile	41
50th percentile	49
75th percentile	57
Mean ± 1SD	67.6% of cases (68.3)*
Mean ± 2SD	97.4% of cases (95.4)*
Mean ± 3SD	99.8% of cases (99.7)*
Absolute Range	2 to 69
Z Range	-3.31 to 1.86**

*Percentages expected in the normal curve.

**Z values of -3 to +3 are expected in the normal curve. A value of +1.86 indicates not enough ceiling on the test.

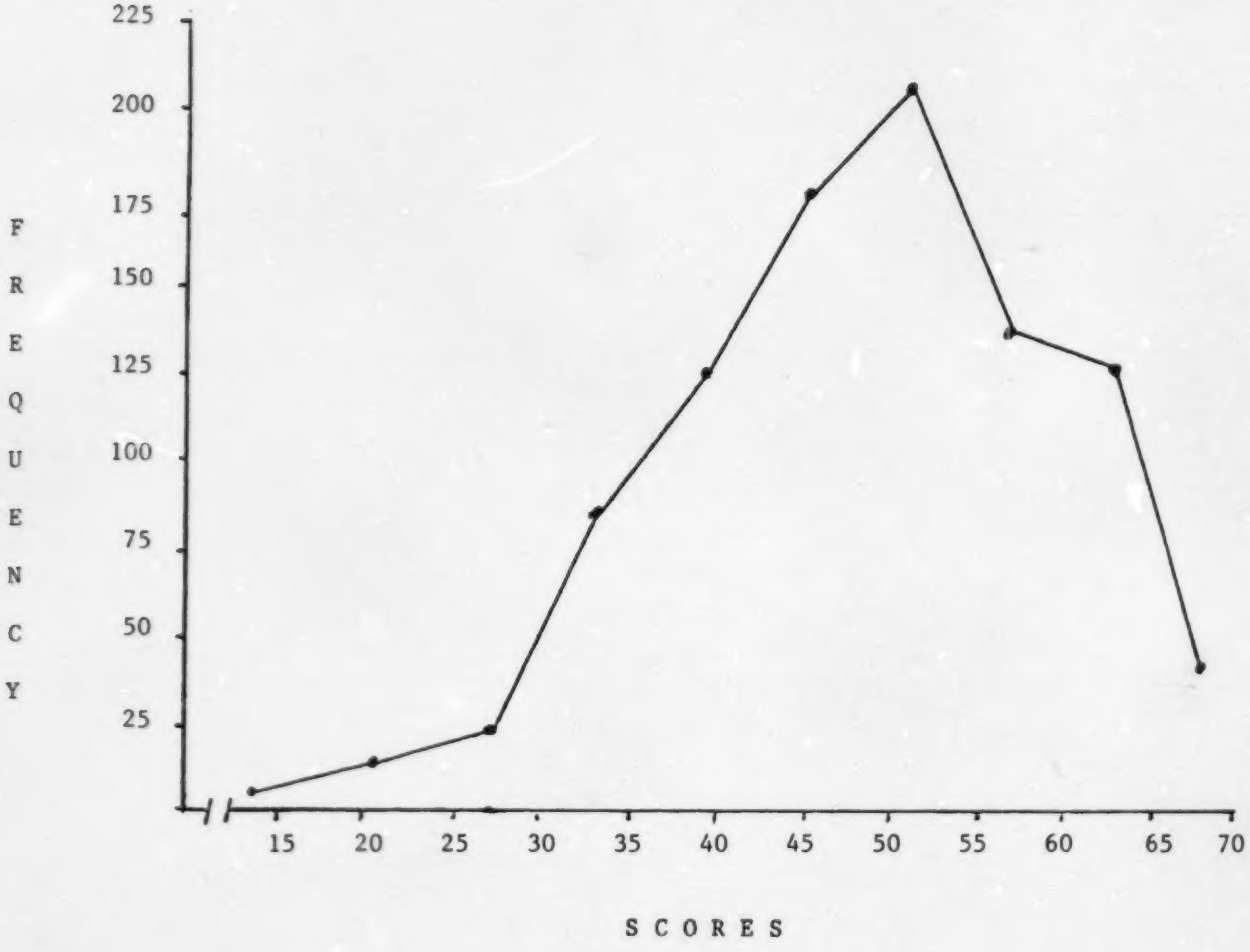

Figure 1: Placement Test Scores for ARC Students (N = 950)

English 1A Data

The frequency of scores against grades is presented in Table 2. One can determine the number of students falling below the cutoff score, and of that group, the number who received any given grade. The scatter plot of these data is shown as Figure 2. In Table 3 are presented the means for both the qualified (score 57 or more) and for the underqualified. The correlation between grades A - D and test scores is .25 which is significantly different from zero ($p < .01$) but accounts for only 6.25% of the variance in grades. When "F" and/or "WT" grades are entered into the correlational procedure, the prediction capability drops to nil.

Another analysis was run between the qualified and underqualified in terms of receiving a "C" grade or higher. Using 57 as the cutoff score, the probability of receiving a "C" or higher is .68 for qualified and .57 for underqualified. Unfortunately, this difference is not statistically significant. Nor does raising or lowering the cutoff score result in a statistical difference between the two groups. However, when each grade level is examined (rather than looking at only "C" or higher) significant differences emerge, and these differences hold true raising or lowering the cutoff score. The underqualified earn fewer "A's" (9% versus 27%), more "C's" (21% versus 13%) and drop out more often (32% versus 22%). The rates for "B", "D" and "F" are about the same. Thus, there is some grade discrimination between qualified and underqualified groups.

The conclusion we reached from this data analysis is that the current English Placement Test does not predict enough success in English 1A to warrant guidance that emphasizes compliance with the cutoff score of 57.[1]

[1]Many students do not comply in that 24% of those taking English 1A were underqualified by score.

Of course, this type of analysis is not meant to shed any light on the validity of grades. These results merely indicate that one measure is not highly predictive or discriminating of another measure.

Table 2

Frequency of English 1A Letter Grades by Placement Test Scores (N = 311)

Score Interval	Grade Outcomes A	B	C	D	F	WT
69-70	6	2	1		1	3
66-68	9	5			3	9
63-65	7	14	6	1	7	6
60-62	27	25	7	2	5	13
57-59	15	20	16		5	20
English 1A Cutoff						
55-56	2	6	3	1	3	6
52-54		4	4		1	4
49-51	1	1	2		3	1
46-48	1	2	3	1		4
43-45	3	1				2
40-42		3	1			4
37-39		1	2			
English 57/60 Cutoff						
34-36		1				3
31-33		1	1			
27-30						
24-26						
21-23						
18-20						
15-17						
12-14						
Totals	71	86	46	5	28	75
Percent	22.8	27.7	14.8	1.6	9.0	24.1

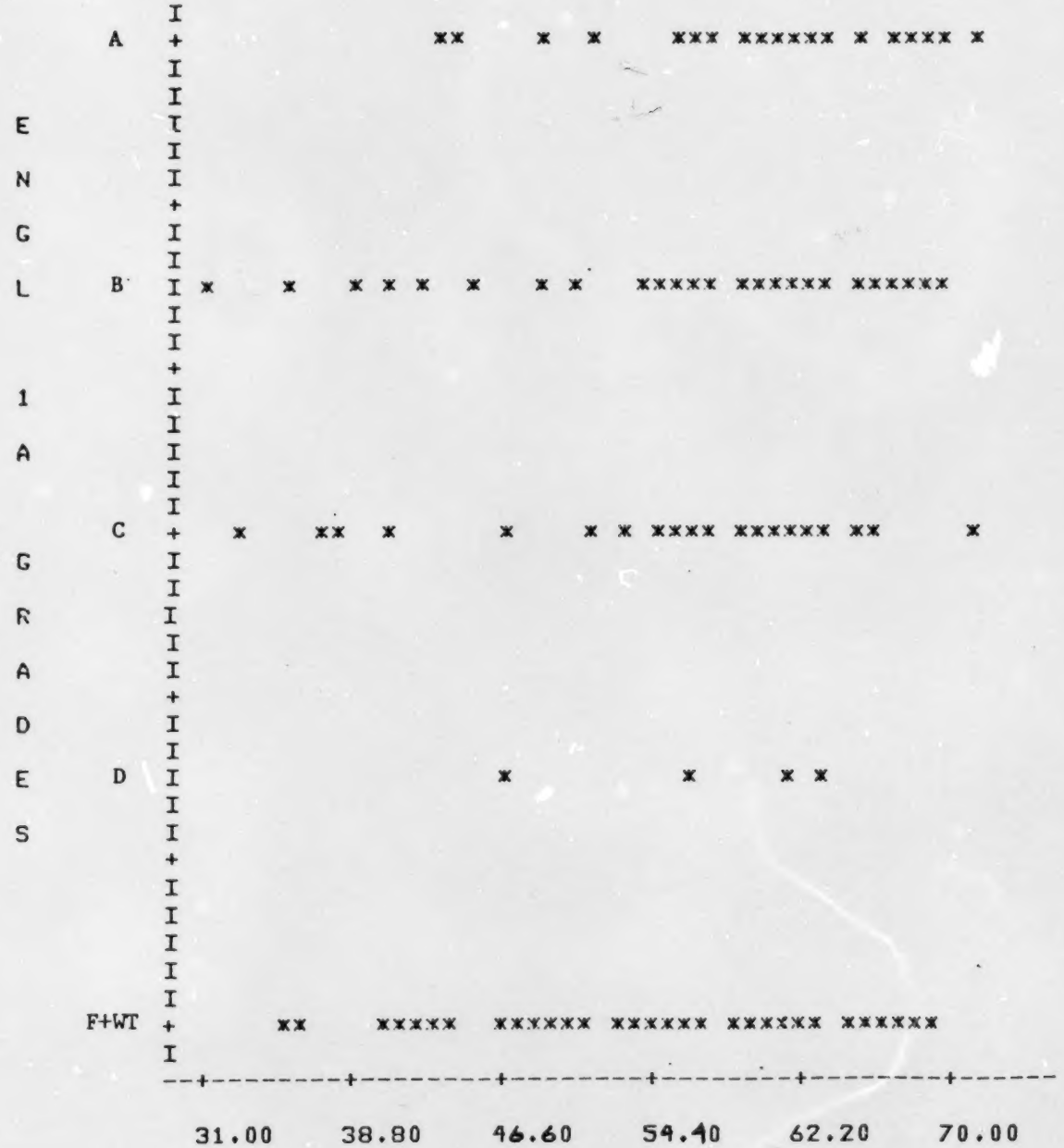

Figure 2: Scatter Plot for English 1A Placement Test Scores and Grades (N = 311)

Table 3

English 1A Placement Test Scores and Grade Outcomes (N = 311)

Grade Outcomes	Mean Score Qualified (N = 235)	% in this Sample	Mean Score Underqualified* (N = 76)	% in this Sample
A	62.2	27.2	48.6	9.2
B	61.4	28.1	48.3	26.3
C	60.1	12.8	48.1	21.1
D	61.7	1.3	51.0	2.6
F	62.4	8.9	52.9	9.2
WT	61.8	21.7	48.6	31.6
		100.0		100.0

*Underqualified accounted for 24% of the English 1A assessed sample.

English 57 Data

The frequency of scores by letter grade appears in Table 4 and is graphically presented in Figure 3. It appears as though there is near complete overlap of scores across different letter grades. In Table 5 are the means of qualified, overqualified, and underqualified students by letter grade. Note that with the exception of "A's", all letter grades have nearly the same score mean. The correlation between scores and grades is .11, which is not significantly different from zero When "F's" and/or "WT's" are added, the correlation drops further. There was a reasonably high compliance rate with cutoff scores (2% overqualified and 3.2% underqualified).

The conclusion to be reached from this analysis is that there is no relationship between scores and grades for English 57 students.

Table 4

Frequency of English 57 Letter Grades by Placement Test Scores (N = 442)

Score Interval	Grade Outcomes A	B	C	D	F	WT
69-70						
66-68						1
63-65		2				
60-62						
57-59	1	1	1		3	2
English 1A Cutoff						
55-56	3	6	6	1	1	5
52-54	12	17	21	3	11	16
49-51	4	26	25	6	12	15
46-48	6	18	25	5	10	13
43-45	2	20	21	3	8	9
40-42	1	9	19	3	6	11
37-39	3	5	10	1	6	12
English 57 Cutoff						
34-36		2	1	1		3
31-33		3				1
27-30	1					1
24-26						1
21-23						
18-20						1
15-17						
12-14						
Totals	33	109	129	23	57	91
Percent	7.5	24.7	29.2	5.2	12.9	20.6

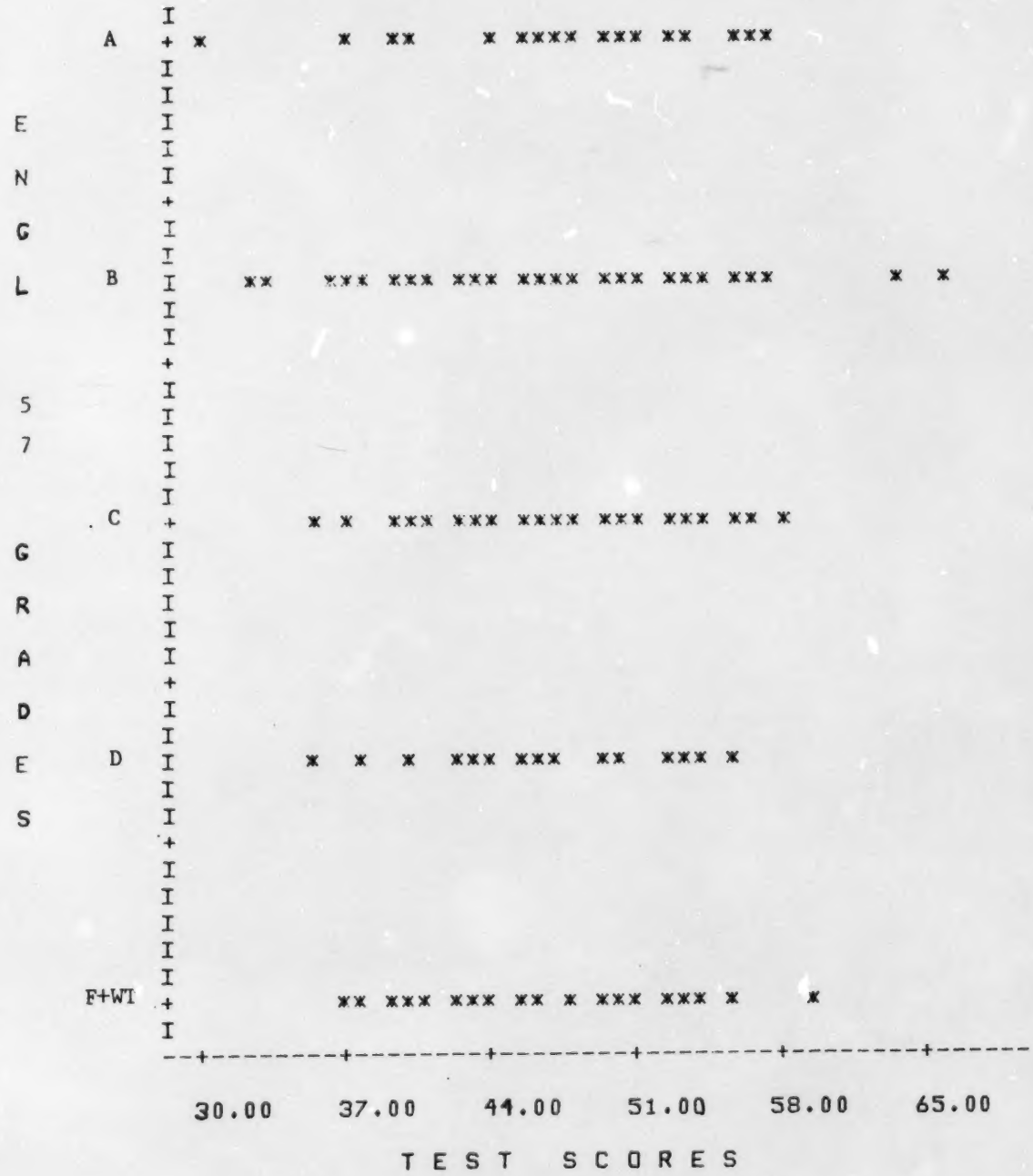

Figure 3: Scatter Plot for English 57 Placement Test Scores and Grades (N = 442)

Table 5

English 57 Placement Test Scores and Grade Outcomes (N = 442)

Grade Outcome	Mean Score Qualified (N = 419)	% in this Sample	Mean Score Overqualified* (N = 11)	% in this Sample	Mean Score Underqualified* (N = 15)	% in this Sample
A	49.5	7.5	63.0	9.0	30.0	6.7
B	47.6	24.3	61.7	27.3	33.8	33.3
C	46.9	30.5	58.0	9.0	35.0	6.7
D	47.0	5.3	----	----	35.0	6.7
F	46.7	13.0	59.0	27.3	----	----
WT	46.7	19.5 100.1	61.7	27.3 99.9	30.4	46.7 100.1

*Overqualified accounted for 2% of the English 57 assessed sample and underqualified accounted for 3.2%.

English 60 Data

The frequency of scores by grade appears in Table 6 and is graphically presented in Figure 4. The number of students (N = 59) is substantially smaller than with English 57 or 1A, hence, there are fewer plot marks. In Figure 4, one can begin to see a slight trend linking higher scores with "A's","B's", etc., even though there is considerable overlap. The correlation is .47 which is statistically significant from zero ($p < .001$) and accounts for 22% of grade variance. (A correlation value of .47 falls in the range that most test publishers would glady lay claim.) There is a slight reduction in mean scores as one moves from A to F. This phenomena is seen in Table 7. Compliance with cutoff scores is reasonably high in that 90% fell within the established score range for the course.

The English Placement Test is a moderately good predictor of English 60 grades and guidance could proceed with this in mind.

Table 6

Frequency of English 60 Letter Grades by Placement Test Scores (N = 50)

Score Interval	Grade Outcomes					
	A	B	C	D	F	WT
69-70						
66-68						
63-65						
60-62		1	1			
57-59						1
English 1A Cutoff						
55-56	2	1				1
52-54	2	2				2
49-51	2	1	2	1	1	1
46-48	1	2	1			
43-45		4	1			2
40-42		1	1	2	2	1
37-39		4	2		1	2
English 60 Cutoff						
34-36						
31-33						
27-30			1			
24-26						
21-23						
18-20						
15-17						
12-14				1		
Totals	7	16	9	4	4	10
Percent	14	32	18	8	8	20

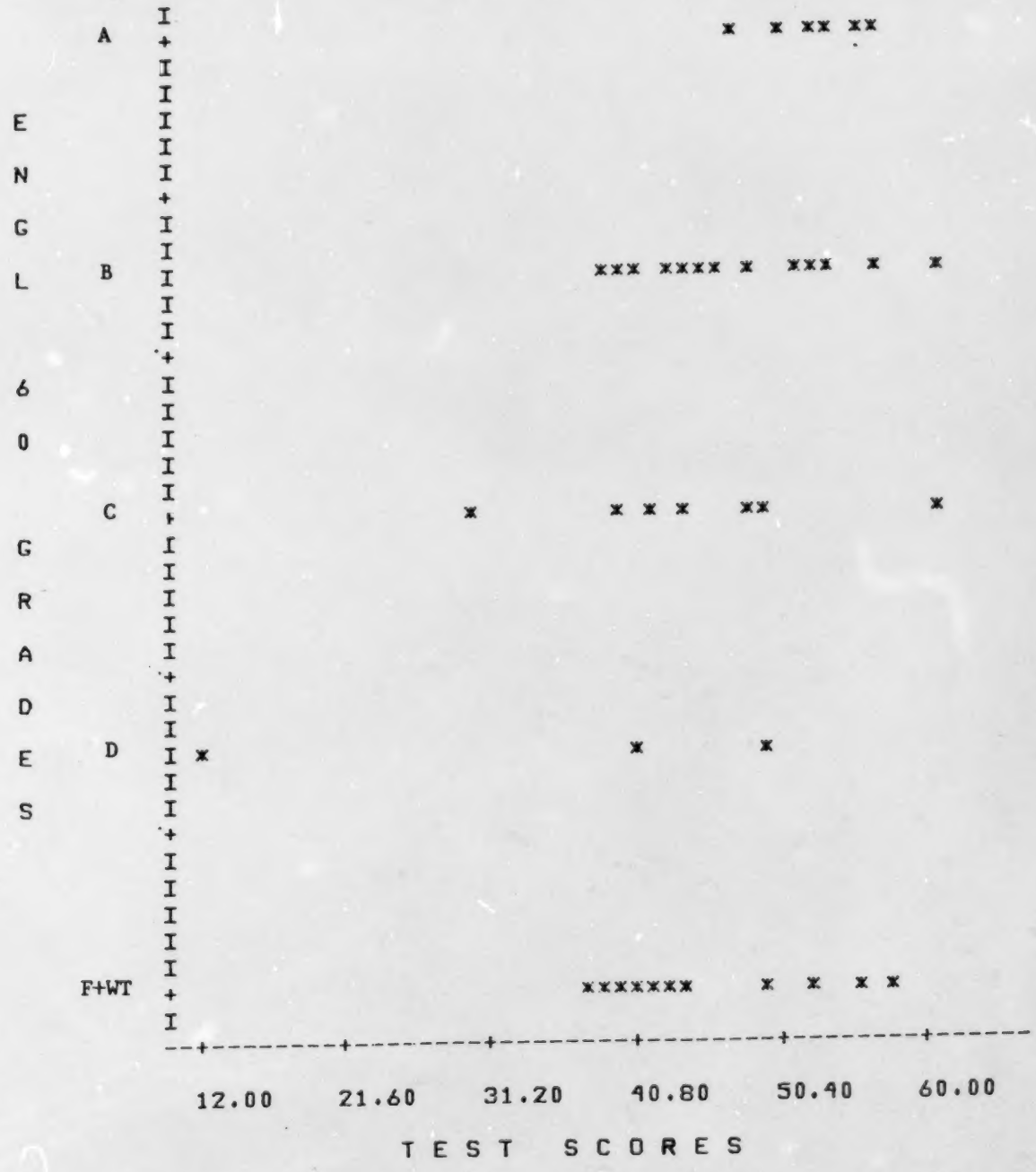

Figure 4: Scatter Plot for English 60 Placement Test Scores and Grades (N = 50)

Table 7

English 60 Placement Test Scores and Grade Outcomes (N = 50)

Grade Outcome	Mean Score Qualified (N = 45)	% in this Sample	Mean Score Overqualified* (N = 3)	% in this Sample	Mean Score Underqualified* (N = 2)	% in this Sample
A	51.9	15.6	----	----	----	----
B	45.1	33.3	60.0	33.3	----	----
C	44.3	15.6	60.0	33.3	30.0	50.0
D	43.7	6.7	----	----	12.0	50.0
F	42.0	8.9	----	----	----	----
WT	45.9	20.0	57.0	33.3	----	----
		100.0		99.9		100.0

*Overqualified accounted for 6% of the English 60 assessed sample and underqualified accounted for 4%.

English 56 Data

Frequency data and graphic presentation of it appear in Table 8 and Figure 5. The means of scores by grade level are listed in Table 9. In Table 10 is the frequency of units earned. Examining Table 10, one will notice that approximately 65% of the English 56 students completed one unit in this variable unit course. This presented a bit of a problem in running a correlation. Is one unit of "A" worth more than three units of "B" in terms of academic achievement? Grade point conversion could make one unit of "A" (4 grade points) equal to two units of "C" (4 grade points). We resolved this issue by conceptualizing the number of units as reliability of the grade. In other words, a "B" based on 3 units is probably a more stable index of performance than two units of "B". Correct or not, all grades were given full value regardless of units. The correlation between English 56 grades and scores is .19, significantly different from zero ($p < .05$) but accounting for only 3.6% of grade variance. Compliance with cutoff scores was not exceptionally high in that 19% were overqualified for the course.

Our conclusion for English 56 is that the English Placement Test does not predict grades within this course.

Table 8

Frequency of English 56 Letter Grades by Placement Test Scores (N = 147)

Score Interval	Grade Outcomes					
	A	B	C	D	F	WT
69-70						
66-68						
63-65						
60-62	1					1
57-59						
English 1A Cutoff						
55-56	1				1	1
52-54			1			
49-51	1					
46-48	3				1	1
43-45	4	1				2
40-42			1		1	1
37-39		3	1		2	
English 57/60 Cutoff						
34-36	8	7	5		2	8
31-33	8	10			9	10
27-30	6	6	1	1	5	8
24-26	2	1		1	4	1
21-23		2			3	1
18-20	1	2	1		2	1
15-17		2				
12-14		1				
Totals	35	35	10	2	30	35
Percent	23.8	23.8	6.8	1.4	20.4	23.8

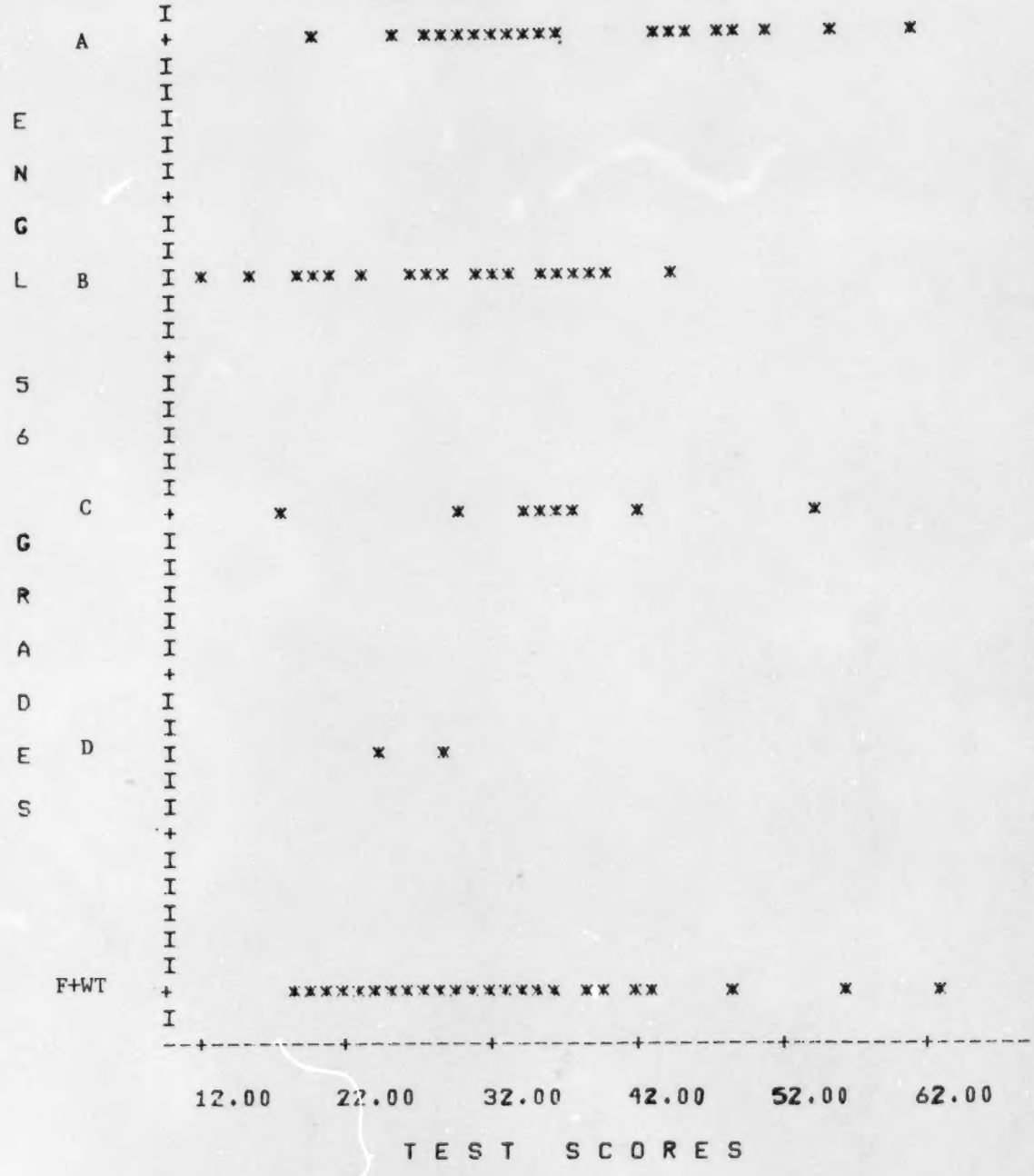

Figure 5: Scatter Plot for English 56 Placement Test Scores and Grades (N = 147)

Table 9

English 56 Placement Test Scores and Grade Outcomes (N = 147)

Grade Outcome	Mean Score Qualified (N = 119)	% in this Sample	Mean Score Overqualified* (N = 28)	% in this Sample
A	31.2	21.0	48.3	35.7
B	28.7	26.1	39.5	14.3
C	32.1	5.9	44.3	10.7
D	26.5	1.7	----	----
F	28.3	21.0	44.2	17.9
WT	30.9	24.4	49.0	21.4
		100.1		100.0

*Overqualified accounted for 19% of the English 56 assessed sample.

Table 10

Frequency of English 56 Units Earned by Grade

Grade	1 Unit	2 Units	3 Units	4 Units	Total
A	23	12	--	--	35
B	30	3	2	--	35
C	--	--	4	6	10
D	--	--	1	1	2
Total	53	15	7	7	82
Percent	64.6	18.3	8.5	8.5	

Summary

Listed in Table 11 for each course are the number of students, the non-compliance rate with existing cutoff scores, the rank order of English Placement Test means by grade group, the correlation with grades A - D, and the variance in grades predicted by test scores. The rank ordering of means listed in this table often is based on very small differences. Recall that scores of "F" and "WT" qualified students often parallel those who earned "A's" or "B's". It seems safe to say that "F" and "WT" graded students do not constitute a low ability group. For example, in English 1A, the "F" students had the highest mean score over other grade groups. This suggests that these students dropped class or earned "F's" based upon factors other than abilities measured by the English Placement Test (for non-attendance?). The "WT" rate (4th week on) across all English courses was 22.3%. Likewise, the overall "F" rate for all courses was 12.5%.

The primary purpose of any placement exam is to offer evidence that students properly placed in courses based upon test performance criteria, have a higher probability of success than students who do not reach the minimum test criteria. This statement is especially appropriate for English 1A. In using test scores for placement, it is assumed that students with low scores will have difficulty in succeeding in the regular writing course. Because remedial instruction is specifically designed to remedy skill deficiencies, the test scores would not be expected to predict remedial course outcomes to any large degree. In this case a criterion referenced test (e.g., writing) given at the end of the semester would be more appropriate in determining whether the deficiencies have been corrected.

The manual for the English Placement Test indicates that Sentence Structure, and Usage tests are the two scores likely to be most useful in identifying students who need remedial instruction in writing. Reading Comprehension and Vocabulary tests are mentioned in identifying students who need special assistance but would not normally be used to place students in remedial writing courses.

Table 11

Summary Data for all English Courses (N = 950)

Course	Number of Students	Noncompliance Rate	Rank Order of Mean Scores (Qualified only) A	B	C	D	F	WT	Correlation with Grades A - D	Variance Accounted for
English 1A	311	24.4%	2	5	6	4	1	3	.25	6.25%
English 57	442	5.8%	1	2	4	3	5.5	5.5	.11	1.21%
English 60	50	4.0%	1	3	4	5	6	2	.47	22.09%
English 56	147	19.0%	2	4	1	6	5	3	.19	3.61%

Recommendations

Given what we know of the relationships between placement test scores and grades, the following recommendations are made:

1. Locate or develop a criterion based test using a writing sample to place students into various English courses.
2. Being unable to accomplish #1, expand the current placement test to include other subscales or consider another test.
3. Being unable to accomplish #1 or #2, include the Sentence Structure Test and eliminate the Vocabulary Test.
4. Determine the proper score weights to be given when more than one test is used, or convert scores into standardized score scales (Range 0 - 25, Mean = 13, SD = 4).
5. Establish reasonably common criteria for grading.
6. Continue support for research in finding a suitable predictor of grades.
7. Continue policy of using placement test results only for guidance purposes until validity has been established.
8. Have assessment test results and grades in centralized computer.

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